

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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08/01/03
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Re: Application of Roman Golicz et al.

Serial No. 08/962,077

Date: July 15, 2003

Filed: September 14, 1998

Examiner: D. Bollinger

Applicant: Roman Golicz et al.

Art Unit: 3651

Title: Sheet Feeding Apparatus

Atty. No. 9534

APPEAL BRIEF

STATEMENT

RECEIVED
JUL 23 2003
GROUP 3600

Applicants are the real parties in interest. There are no related appeals or interferences.

STATUS OF CLAIMS

Claims cancelled: 1-25, 29, 38

Claims subjected to restriction requirement: 33-37 and 40-44

Claim 39 is objected to.

Claims for which amendment after final rejection was allowed, but which is still rejected: 26

Claims finally rejected, subject of this appeal: 26-28, 30-32 and 45

SUMMARY OF THE INVENTION

The invention involves a sheet feeding apparatus which has a device called a prompter that has novel aspects as follows. Fig. 1, 2 and 3 show the prompter with the relevant portions of the apparatus. The prompter 20 is comprised a belt 20 running around two rollers 22, 24. The outer roller 24 is supported by the outer end of an H-shape prompter body 26. The inner roller 22 is mounted on drive shaft 28, which shaft also supports the inner end of the prompter body.

There are two moments applied to the body, both acting in the same direction, and they both force the outer end of the prompter onto the sheets which are being fed.

a) A first moment is created by rotary friction. In the Fig. 1-3 embodiment the rotary friction force is created at the semi-circular openings of bifurcated body ends 27, due to the elastic force in the belt. (Spec. 8, lines 1-6). In the alternative embodiment of Fig. 18 (Spec. 9, last paragraph, lines 1-8) the body is mounted on shaft 28B by frictionless bearings, a clutch 19 causes rotary friction and creates the first moment; and, the belt may be inelastic.

b) The second moment is created by the engagement of the moving belt with the sheets which are being fed.

When there are no sheets present, there is thus a downward moment on the prompter. (Spec. 8, lines 6-10)

The apparatus is one in which the sheets are moved along a flow path 19 which lies along a plane, e.g. infeed/input table 21. (Fig. 6, Spec. 6, last full para.) With reference also to Fig. 1, the second roller 24 at the outer end of the prompter is on top of the stack 70 of sheets, and higher than both the elevation of the inner roller and said plane (i.e., the top surface of infeed table 21, 32).

The belt used with the foregoing apparatus has ribs, particularly ribs that have elastomeric and aspect ratio properties that make them substantially deflectable, providing a surprising result that they shed the debris which belts in contact with printed sheets, for instance laser printed sheets, are prone to accumulate. (Fig. 5A, Fig 5B; Spec. 7, two full paragraphs)

ISSUES

1. Should claim 26 be rejected under 35 USC 102 based on the Habich et al or Anderson et al. patents, when neither discloses a critical element of the claimed invention, namely the first moment?
2. Should claims 27-28, 30-32 and 45 be rejected under 35 USC 103 based on the prior art cited, when there is insufficient teaching to combine; and, when the invention is not obvious from the references even when they are combined?

ARGUMENT

In general

In prior art devices which are somewhat similar, there will be a second moment -- due to engagement of a belt with sheets, but that moment will not necessarily be in the same direction as applicants' first moment. None of the prior art devices show or suggest the first moment created by rotary friction force.

1. Rejection of claim 26 under 35 USC 102

The rejection of claim 26 is based either the Habich et al. ("Habich") and Anderson et al. ("Anderson") patents. It is not well-grounded, as follows.

Each references only inherently discloses a single moment, namely applicants' second moment, which is due to contact of the belt with sheet. They do not teach applicants' first moment the invention is thus applicants whole invention is not enabled within the meaning and requirement of 35 USC 102.

The final rejection says "the clockwise rotation of shaft 1 of Habich and the means imparting rotation of belt 26 of Anderson are (means for imparting the first moment)" (Pg 4, 11/19/02 OA). That is not correct. Belt 26 of Anderson imparts a second moment, not a first moment. Second, neither patent shows rotary friction induced first moment.

Habich does not show any means for imparting a first moment to the body 11, mounted on shaft 1. Habich at page 2, 3rd line of 3rd paragraph, which says "Body 11 is free to rotate on shaft 1".

With reference to Anderson Fig. 1, at Col. 3, line 5-15, picker belt 26 is rotated by pulley 48 mounted on shaft 49. The shaft also drives pulley 46. Body (bracket) 52 is pivotably mounted on shaft 49. Col. 3, line 13-14. As such, the body 52 is not given any rotary friction first moment.

Therefore, the rejection should be reversed.

2. Rejection under 35 USC 103 of claims 27-28, 30-32 and 45

All claims are dependent from claim 26 and thus, in the first instance, they should be allowable as preferred embodiments of a patentable invention.

The claims have nonobvious novelty beyond their dependency. Many of the claims have been summarily rejected on the grounds of being "mere choice". However, the rejection cannot be based on functional or mechanical equivalency, but that equivalency must be recognized in the prior art. In re Ruff, 118 USPQ 340 (CCPA 1958). The rejection does not meet that test, as indicated below. The examiner has not in each instance met the burden of indicating how the prior art suggests the desirability of the combinations claimed by applicant. In re Mills, 16 USPQ2d 1430 (Fed. Cir. 1990). Applicants will not repeat this argument each time, below, but it should be applied.

Further, the rejection does not consider the whole invention, but in its bits and pieces. In re Antonie, 159 USPQ 6 (CCPA 1977).

Each claim should be allowable for the following further reasons.

Claim 30, rejected on the Habich patent or the Anderson patent in combination with Marzullo, requires:

- (1) an article flow path along a plane
- (2) shingled stack of sheets on the plane
- (3) a prompter second roller which is
 - (i) above the stack and
 - (ii) higher in elevation than the plane.

The second roller is the one farthest from the drive shaft. In none of the three references is the second roller of the prompter higher in elevation than the first roller. Both Anderson and Marzullo show the second roller lower than the first roller. The second roller of Habich maybe shows a horizontal prompter. Considering the prior art as a whole, it teaches away from applicants' invention. *Gore v. Garlock*, 220 USPQ 303 (Fed. Cir. 1983)

The stacks of Anderson and Habich have vertical edges and are on elevators; they lie beneath, not on the plane, as claimed by applicants. Marzullo's stack lies on the flow path plane. But it is technologically improper to combine in the one instance Anderson/Habich equipment having an elevator, with in the second instance Marzullo equipment which draws sheets along a planar flow path. It is a mystery how the shingled stack and device of Marzullo would be adapted to Anderson/Habich. Plain and simple: shingled stacks are not put on elevators and elevators are not used for feeding along a plane. The combination of the references is an impossible device.

Furthermore, the combination must show the invention as a whole, and that includes the two moments.

In summary, this rejection is based on hindsight; there is no need or suggestion to combine references; it is not evident how they would be combined; and, if combined they would not be the invention claimed.

The examiner rejected **claims 27-29** based on the combination of Habich or Anderson and O'Brien patents. In the amendment after final rejection, the matter of claim 29 (now cancelled) is in claim 26. Thus, for purposes of this appeal brief, the rejection of claim 29 will be treated as if applied to present claim 26. Applicants' argument about patentability is as follows.

1. O'Brien's "body" 40 is part of a rhomboid linkage assembly. The O'Brien apparatus is a singulator. It has an entirely different function, and cannot teach about motions of prompters of applicants, or be applied to picker/prompters of Anderson or Habich. Thus, the references are not properly combined in an engineering sense, to support a rejection.

2. Element 40 is part of an assembly 36 which is attached to rear wall 41 at two points. The pivotable motion of the assembly and element 40 within the assembly is slight. The outer roller 39 is physically barred from approaching the sheets by guide 73. Col. 6, line 39. See Fig. 5 and 2. Col 3, lines 5-57. See Col. 6, lines 2-6.

3. Element 40 is cited as teaching the invention. Actually, element 40 is a link, one of two opposing side links. There is not any body like applicants. Links can move independently, and thus do not teach about how to make a solid body -- i.e., to bifurcate.

4. The O'Brien belt 38 runs in reverse direction to the direction of the flow of sheets. See the direction arrow in O'Brien Fig. 2. Frictional engagement of the O'Brien belt with a sheet or envelope tends to lift the rhomboid assembly and link 40 from the flow path and sheet contact (which is why O'Brien has spring arm 45). The O'Brien lifting motion opposite to what applicant claims in claim 26. So, the combined references are not applicants' invention; and, O'Brien, if anything, teaches away from applicants' invention.

Thus, as to **claim 27**, there is no suggestion or need to adapt the bodies of Anderson/Habich to make them bifurcated; and it is not obvious how that would be done, other than by using hindsight. Even if the disclosures were combined, the result would be a bifurcated body which was not frictionally engaged with a drive shaft.

As to **claim 28**, applicants agree it is normal to stretch belts around rollers. What is not normal, nor suggested by the references is to stretch a belt around a first and second rollers spaced apart by a bifurcated end body, which is frictionally engaged with a drive shaft by a belt, and where the belt tension force generates friction between the body and the shaft. Thus, the claim is much more than that claim for which the examiner's combination would support a rejection.

Claims 31-32 were rejected based on Habich, Anderson and Watanabe. Applicants' claim includes ribs which are substantially deflectable. There is no teaching, from Watanabe or the other two cited references, to make ribs have substantial deflectability. Watanabe is silent on deflection. However, visually, from the aspect ratio and common knowledge of materials, it would appear they would not be substantially deflectable. See Attachment A, a comparison of Watanabe's ribs with applicants' Fig. 5A/5B.

The rejection says the aspect ratios claimed by applicants are obvious design choice, since there is no criticality. However, this is wrong. Applicants' claims 32, 45 require certain high aspect ratios in combination with the substantial deflectability; and they assert the aforementioned self-cleaning criticality. Specification, bottom of page 7. Thus, there is a change in principle of operation, which is not taught.

Applicants' ribbed belt is in a substantially different realm "aspect ratio-wise". And Watanabe shows rectangular and blunt trapezoid cross section ribs, that do not suggest triangle cross section ribs. It would be unobvious to change in direction of triangle or aspect ratio, since the contact area with paper is reduced, and wear will be increased.

Measuring a blow up of Watanabe's sketch (Attachment A) as best as possible indicates an aspect ratio of around 0.8-0.9 to 1 for the rectangular cross section rib belt 10 and about 0.6 to 1 for the trapezoid cross section ribbed belt 7. This contrasts with applicants' claim to 1.3 to 1 to 4:1 (claim 32, rectangle) and 2:1 to 4:1 (claim 45, triangle).

CONCLUSION

The rejection is not in compliance with the law and regulations and should be reversed. The claims should be allowed.

Respectfully submitted,
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APPENDIX
CLAIMS UNDER APPEAL

26. Article feeding apparatus of the type in which flat articles such as sheets are moved downstream along an article flow path, including a prompter for moving articles along the flow path, wherein the prompter comprises:

a shaft, extending transversely to the flow path;

a first roller, mounted on the shaft;

a body, having a first end and second end lying along the body length; the first end pivotably engaged with the shaft proximate the first roller;

a second roller, mounted at the second end of the body;

a belt, mounted on and endlessly running around the first and second rollers, having a surface which frictionally engages and moves downstream an article along the flow path, when the body second end is positioned upstream of the first end;

means for moving the belt around the rollers and thus rotating the rollers; and,

means for imparting to the body a first moment created by a rotary friction force applied directly to the body; wherein the first moment urges the body to rotate around the shaft and thereby press at the second roller end against any article lying along the flow path;

wherein said frictional engagement of the belt with an article moving downstream along the flow path, due to the motion of the belt running around the rollers, imparts to the body a second moment, distinct from the first moment, which urges the body to rotate in the same direction as the first moment.

27. The apparatus of claim 26 wherein the means for moving the belt comprises a first roller driven by rotation of the shaft; and, wherein the body first end is bifurcated to straddle the first roller and frictionally

engage the rotating shaft, thereby to create said first moment.

28. The apparatus of claim 27 wherein the belt is made of elastomer and is stretched between the rollers, so tension in the belt holds the body in frictional and pivotable engagement with the shaft, to thereby create said first moment.

30. The apparatus of claim 26 wherein the article flow path lies along a plane; further comprising a shingled stack of sheets lying along said plane; wherein the prompter second roller lies above the stack at an elevation higher than the elevation of the first roller and higher than the elevation of said plane.

31. The apparatus of claim 26 wherein the belt has a surface comprised of a plurality of transverse ribs with cross sections which make the ribs substantially deflectable when the belt pulls an article along the flow path.

32. The apparatus of claim 31 wherein each rib in said plurality of ribs has a cross section which is rectangular and has a height to width aspect ratio of between about 1.3:1 and 4:1.

45. The article of claim 31 wherein each rib in said plurality of ribs has a cross section which is triangular and has a height to width aspect ratio of between about 2:1 and 4:1.

extra

30. The apparatus of claim 26 wherein the article flow path lies along a plane; further comprising a shingled stack of sheets lying along said plane; wherein the prompter second roller lies above the stack at an elevation higher than the elevation of the first roller and higher than the elevation of said plane.

32. The apparatus of claim 31 wherein each rib in said plurality of ribs has a cross section which is rectangular and has a height to width aspect ratio of between about 1.3:1 and 2.6 to 1.

39. The article feeding apparatus of claim 26, further comprising:

two opposing sidewalls, one each on either side of said flow path;

opposing mounting blocks, one each block slidably and detachably mounted on an opposing sidewall;

wherein the shaft is journaled at opposing ends in the mounting blocks; wherein, each block is vertically slidable along its respective sidewall, to enable adjustment of the vertical position of each end of the shaft;

resilient means for pressing each mounting block downwardly toward the sidewall ; and,

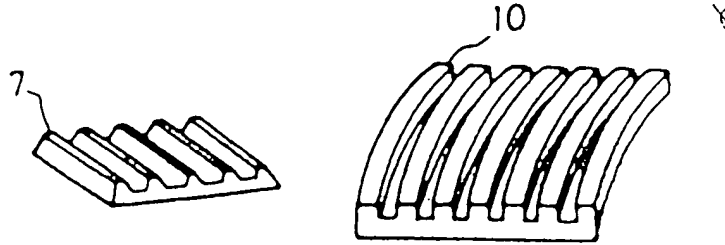
screw adjustment means associated with each mounting block, for causing the mounting block to move vertically in opposition to downward force of said resilient means.

45. The apparatus of claim 31 wherein each rib in said plurality of ribs has a cross section which is triangular and has a height to width aspect ratio of between about 2:1 and 4:1.



ATTACHMENT A

APPEAL BRIEF
GOLICZ SN 081962,077



WATANABE

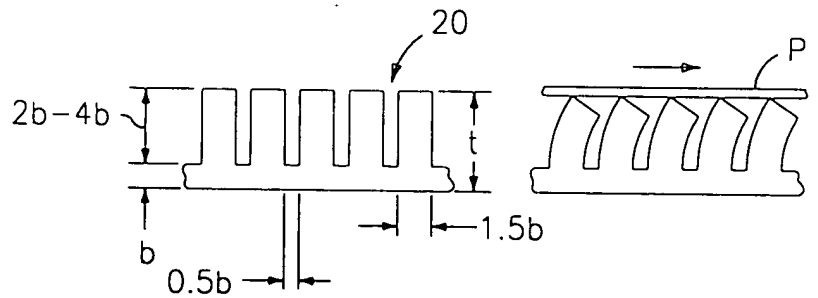


FIG. 5A

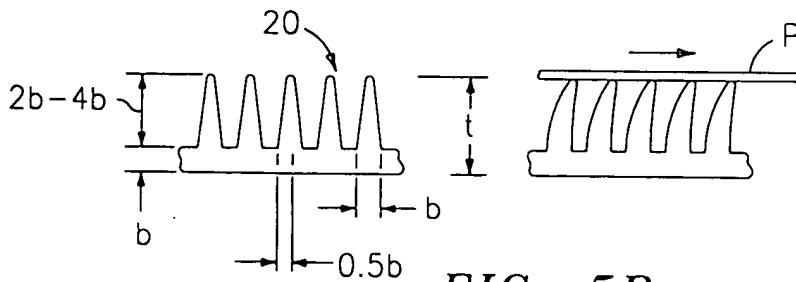


FIG. 5B

APPLICANT